

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

ADREA, LLC,

Plaintiff,

v.

13 Cv. 4137 (JSR)

BARNES & NOBLE, INC.,  
BARNESANDNOBLE.COM LLC, AND  
NOOK MEDIA LLC,

Defendants.

October 14, 2014  
2:00 p.m.

Before:

HON. JED S. RAKOFF

District Judge

APPEARANCES

PROSKAUER ROSE LLP  
Attorneys for Plaintiff  
BY: STEVEN M. BAUER  
COLIN CABRAL  
BRENDAN COX

ARNOLD & PORTER LLP  
Attorneys for Defendants  
BY: LOUIS S. EDERER  
ALI R. SHARIFAHMADIAN  
MICHAEL A. BERTA  
YUE-HAN CHOW  
SUSAN BRACKNEY ARNI

(Trial resumed; jury not present)

THE COURT: We are missing Juror No. 4. My courtroom deputy just went to see if she is stuck in the security line or something like that. There are a couple of little things we can take up in the meantime.

I sent to counsel yesterday by email some very minor further changes in the preliminary instruction and instructed them that if there were any objections, they needed to be made by email this morning. No objections were received, so we now have the preliminary instruction in the form that it will go to the jury. As soon as the jury is here, we will begin by handing it out to them in writing and reading it to them.

THE CLERK: All jurors present.

THE COURT: Let's bring in the jury. Everything else can wait. I want to go to 4:30 but with a short break maybe around 3:10 or so.

Who is the first witness?

MR. EDERER: Mr. Mulchandani.

THE COURT: Out of turn, so to speak. Why don't you get him in the courtroom.

(Continued on next page)

1 (Jury present)

2 THE COURT: Welcome back to the salt mine, ladies and  
3 gentlemen.

4 I thought it would be useful at this point in time,  
5 before we call our next witness, to give you a very brief  
6 overview of some of the legal issues. I am going to ask my  
7 courtroom deputy to hand out to each of you a copy of what is  
8 labeled "Preliminary Instruction."

9 At the end of the case, I'm going to give you detailed  
10 instructions. This is not intended to replace that at all. It  
11 is just a sort of very quick overview of some of the broad  
12 legal principles involved that may be of use to you in  
13 following the evidence as it comes in. We will read it  
14 together now, but you can also leave this with you in the jury  
15 room for further reference.

16 This preliminary instruction is intended to give you a  
17 very brief overview of some of the main issues in this case.  
18 It is no substitute for the more detailed instructions that I  
19 will give you at the close of all the evidence and that will  
20 govern your deliberations.

21 The first issue in this case is whether defendant's  
22 products, which will be referred to as the "Nook Devices,"  
23 infringed any one or more of three of the plaintiff's patents,  
24 that is, the '851 patent, the '501 patent, and the '703 patent.

25 A patent protects the owner of a novel invention from

1 having other people make use of the invention without the  
2 owner's permission. The part of the patent that describes the  
3 invention consists of a series of claims, each of which is  
4 separately numbered. If a Nook device includes all the  
5 elements of a given claim of the '851 patent, the '501 patent,  
6 or the '703 patent, or the substantial equivalent of each of  
7 those elements, then infringement of that claim of that patent  
8 has occurred.

9         If you find that no infringement has occurred, that is  
10 the end of the story. But if you find that infringement of one  
11 or more of the claims of a given patent has occurred, you must  
12 then consider whether the patent or patents that have been  
13 infringed are nonetheless invalid either because the inventions  
14 they describe lack novelty or because they were obvious in view  
15 of prior inventions or because they did not clearly and  
16 adequate describe the invention.

17         If you find that the defendants infringed one or more  
18 of the plaintiff's patents and that the patent was not invalid,  
19 then you must determine what amount of money must be paid by  
20 defendants to plaintiffs because of the harm brought about by  
21 the patent infringement. The sum of money is called damages.

22         Again let me stress that these are the broadest of  
23 instructions designed simply to focus your attention on some of  
24 the main issues in the case. Much more detailed instructions  
25 describing all the issues involved will be given to you at the

1 close of all the evidence.

2 To review it even more briefly, it's a three-step  
3 process. You first have to decide whether there has been  
4 infringement. If, and only if, you find there has been  
5 infringement, then you have to decide whether the patent that  
6 was infringed was nevertheless invalid. If you find that the  
7 infringement has occurred and the patent was not invalid, then  
8 you have to decide on the amount of money damages that has to  
9 be awarded.

10 those are the three steps that you will have to  
11 undertake. I will give you much more detailed instructions on  
12 all this, but I thought it would be useful to have a quick  
13 overview of what you are going to be asked to do.

14 Please call the next witness.

15 MR. CABRAL: Your Honor, plaintiffs call Deepak  
16 Mulchandani.

17 THE COURT: Ladies and gentlemen, we are going to go  
18 to 4:30. We will take a very short break around 3:15 or so,  
19 though it will have to be limited to about 10 minutes. We  
20 can't go to 5 o'clock, as I had thought, because I have other  
21 matters.

22 MR. CABRAL: Your Honor, pursuant to the parties'  
23 agreement, we have agreed to have defense counsel go first. I  
24 don't know if that requires explanation for the jury.

25 THE COURT: Ladies and gentlemen, just before we swear

1 in the witness, some witnesses are called by one side, some  
2 witnesses are called by the other side, some witnesses are  
3 called by both sides. For you it doesn't matter who calls  
4 them, it is completely irrelevant. It has a technical meaning  
5 for me.

6 This particular witness is a witness who is  
7 essentially more of a defense witness than a plaintiff's  
8 witness, but to accommodate his schedule we are taking him now.  
9 It is really irrelevant who calls him. It's what he has to say  
10 and what you think of what he has to say that is important.

11 Let's swear him in, please.

12 DEEPAK MULCHANDANI,

13 called as a witness by the Court,

14 having been duly sworn, testified as follows:

15 THE CLERK: Please be seated. State your name and  
16 spell it slowly for the record.

17 THE WITNESS: Name is Deepak Mulchandani.  
18 D-E-E-P-A-K, last name M-U-L-C-H-A-N-D-A-N-I.

19 THE COURT: Just as you would expect.

20 Go ahead, counsel.

21 DIRECT EXAMINATION

22 BY MR. EDERER:

23 Q. Good afternoon, Mr. Mulchandani.

24 A. Good afternoon.

25 Q. Where are you currently employed?

1 A. I'm employed by a company called Cloud Car.

2 Q. What is Cloud Car?

3 A. Cloud Car is a small company. We are developing a car  
4 infotainment platform.

5 Q. What do you do for Cloud Car?

6 A. I run the engineering organization.

7 Q. How long have you been at Cloud Car?

8 A. I have been with Cloud Car since May of this year.

9 Q. Where you previously employed by Barnes & Noble?

10 A. Yes, I was.

11 Q. What business unit or segment of Barnes & Noble were you  
12 employed by?

13 A. I was employed with the Nook Media Division of Barnes &  
14 Noble.

15 Q. When did you first start working for Barnes & Noble?

16 A. I believe that was in January 2010.

17 Q. You left Barnes & Noble when, again?

18 A. May 2014.

19 Q. You were there for a little over four years, is that right?

20 A. That seems to be so, yes.

21 Q. What was your last position at Barnes & Noble?

22 A. My last position was vice president of software  
23 engineering.

24 Q. Can you explain to the jury, since you are not currently a  
25 Barnes & Noble employee, what brings you here today.

1 A. I had previously been deposed in this case. I felt my  
2 ongoing participation would help in some way.

3 Q. Are you being paid for your testimony here today?

4 A. No.

5 Q. Can you briefly tell us your educational background.

6 A. I have a Bachelor's degree in computer science.

7 Q. From where?

8 A. From Purdue University.

9 Q. When did you graduate?

10 A. In 1992.

11 Q. Can you briefly summarize your work experience just prior  
12 to the time you joined Barnes & Noble.

13 A. Just before joining Barnes & Noble, I was with Hewlett-  
14 Packard. I joined Hewlett-Packard in 2007. Prior to Hewlett-  
15 Packard I was with a company in California called Good  
16 Technology, which was acquired by Motorola.

17 Q. What did you do with Hewlett-Packard? That was your  
18 position immediately prior to Barnes & Noble?

19 A. That is correct.

20 Q. What did you do at Hewlett-Packard?

21 A. At Hewlett-Packard I was responsible for managing a global  
22 software team. We were responsible for developing and  
23 commercializing different products that Hewlett-Packard was  
24 developing in those years.

25 Q. Prior to that time you were with Good Technology and



Motorola, is that right?

A. That's correct.

Q. What did you do at those companies?

A. At Good Technology, again, I managed a global software team. In 2007 we were acquired by Motorola, so I took on different product responsibilities at that time but still focused on the same global software leadership and developing products.

Q. What types of products were you involved with at Motorola?

A. It was largely mobile phones, so different markets that Motorola was focused on.

Q. In 2010 I believe you said you joined Barnes & Noble, is that right?

A. That is correct.

Q. Why did you decide to join Barnes & Noble?

A. There were a few different things going through my mind in 2009. There was a lot of positive press with regards to the Nook 1st Edition, which was in development at that time. To me, after I started some discussions with the leadership team at Barnes & Noble with regards to me potentially coming on board, the powerful aspect for me was that Barnes & Noble -- the leadership team, the company, the organization -- seemed really committed to building and developing a cloud-based ecosystem, if you will.

The ecosystem was really about giving users, in this

case customers, an opportunity to buy digital content from Barnes & Noble and effectively read it anywhere they are, whether it's on a website, a Nook device, or a Nook application.

In addition to that, I think I was personally also excited about the team in terms of the energy and the enthusiasm around the company at that time. These were probably two of the factors that contributed to me coming on board.

Q. What was your first position at Barnes & Noble back in 2010?

A. When I joined Barnes & Noble in 2010, I was a director of software.

Q. How big was the software team at that point?

A. For my team, I was the first employee.

Q. What were you charged with doing?

A. It was an exciting time. Obviously, being the first employee, one of my first responsibilities was building a team, so hiring. But in parallel I also took on responsibility for starting to lead the software and some of the ongoing updates and enhancements we were making for our Nook's 1st Edition, which was by then already in market. We also kicked off the development of two new products. One would be the Nook Color and the other would be the Nook Simple Touch.

Q. How did your responsibilities evolve over time in the four

1 years that you were at Barnes & Noble?

2 A. I will say that the organization grew as a whole. As the  
3 organization grew, my responsibilities and title grew as a  
4 consequence. I took on perhaps more diverse roles within the  
5 company, took on more opportunity, and obviously my team size  
6 grew.

7 Q. By the time you left Barnes & Noble in 2014, how big was  
8 the team?

9 A. At the time of my departure, I think my team was over a  
10 hundred people.

11 Q. You were at the head of that team, were you?

12 A. That is correct.

13 Q. Did you do software engineering for any particular types of  
14 products at Barnes & Noble?

15 A. In general, in the course of my tenure at Nook, more  
16 importantly towards my latter years, I think my team was  
17 involved in producing software literally across all the places  
18 where customers would want to consume content. That is  
19 specifically the website, the Nook applications, which are what  
20 we make available on iPhones, Android, and Windows 8, in  
21 addition to the Nook devices that we were producing and making  
22 offer for sale.

23 Q. Over the course of your employment at Barnes & Noble, how  
24 many different Nook devices were developed and produced?

25 A. When I was with the company, we launched eight hardware

1 devices to the market. We developed some that never quite  
2 launched, but eight actually made it.

3 Q. Did your group work together with other groups within the  
4 company on the development of these products?

5 A. Yes. It was definitely a pretty expansive internal  
6 collaborative effort with other organizations. My team,  
7 myself, we worked very closely with the hardware team,  
8 marketing, product management, sales. So it was a good  
9 collaborative cross-team effort.

10 Q. You mentioned that when you first joined Barnes & Noble,  
11 there was also a Nook product in market, is that right?

12 A. That's correct.

13 Q. What was that product called again?

14 A. That was referred to as the Nook 1st Edition.

15 Q. When you joined the company, did you become familiar with  
16 that product?

17 A. Very much so.

18 Q. Why is that?

19 A. Just because I had to take over immediate responsibilities  
20 for some of the software that we were producing for that  
21 device.

22 Q. You mentioned earlier that one of the reasons you decided  
23 to join Barnes & Noble was because it was committed to  
24 developing a software ecosystem, is that right?

25 A. That is correct.

1 Q. You mentioned in that context a cloud concept, right?

2 A. That is correct.

3 Q. Can you explain a little bit more what the components of  
4 the ecosystem are, in particular your reference to a cloud  
5 system.

6 A. Sure. When you step back and kind of think about Barnes &  
7 Noble as how it represents itself to users, if you will, I  
8 think our dominant element of creating this cloud layer was  
9 really around embodiment of a user account, which is have one  
10 centralized system within our company where we could at any  
11 point in time manage a user, understand how the user is  
12 engaging with us, what types of contents -- books, magazines,  
13 newspapers, catalog, games, apps -- they are purchasing from  
14 us, and really be able to manage their identity and effectively  
15 their experience with Barnes & Noble irregardless of where they  
16 are interacting with us, whether it's on a website, whether  
17 it's on a Nook application, on a device, or physically in the  
18 retail store. The cloud was really that embodiment of a user,  
19 if you will, and it effectively managed and maintained all the  
20 data that was relevant to the user.

21 Q. Can you describe in general terms how the Nook devices work  
22 in connection with the cloud system.

23 A. By design, we wanted to make sure, just to service the use  
24 case that I described, where at any given point in time you  
25 wanted to have the user always get one consistent view from a

1 Barnes & Noble perspective to them. We managed the cloud as  
2 kind of the master of the system where regardless of where you  
3 interacted with us, the data was always there.

4 The devices, the Nook applications, the website were  
5 really what we call servants in the sense that they were  
6 effectively presenting the data that the cloud was presenting  
7 for that user wherever the user happens to be engaging or  
8 interacting on the device.

9 Q. When you left Barnes & Noble in 2014, was it still using  
10 the same type of cloud system that you just described?

11 A. Yes.

12 Q. The Nook 1st Edition was already in market when you first  
13 joined. What was the first new Nook product that you began to  
14 work on in your position as director of software engineering?

15 A. In 2010, as I mentioned, there were two devices that we  
16 kicked off. One was the Nook Color, which launched in holiday  
17 2010. It was the first 7-inch color product that really  
18 brought together a kind of reading-optimized experience. In  
19 parallel we were also developing a product that subsequently  
20 launched called the Nook Simple Touch, which was the first time  
21 a black and white display product had been paired with a touch  
22 screen for users.

23 Q. How were those products received?

24 A. We were fortunate in the sense of a lot of our product  
25 development and ideation and, more importantly, execution

1 always allowed us to achieve a set of many firsts in the  
2 market, if you will. As I mentioned, with Nook Color being  
3 able to be in market with a 7-inch color product really  
4 optimized around reading, being able to offer new types of  
5 content, like interactive books, video books, kids interactive  
6 books, digital magazines in color, those were kind of new  
7 markets that actually Barnes & Noble helped open for the  
8 industry as a whole through our device.

9 Simple Touch was the same in the sense of first time  
10 we had technologically brought two pieces together, a black and  
11 white display with touch, opened up a new interaction paradigm  
12 for black and white.

13 In subsequent years we followed that with many other  
14 innovations both on the hardware and software side. Publicly,  
15 I would say that we were recognized more in informal ways with  
16 regards to either Consumer Reports or other public reviews, if  
17 you will. And I would say that in a few instances we saw some  
18 of our products do fairly well in consumer report ratings. So  
19 it would be a public way of getting recognition.

20 Q. If you would briefly take us through the different products  
21 that came out over the course of the time that you were at  
22 Barnes & Noble and approximately when each product came out.

23 A. Sure.

24 Q. I'm talking about the Nook devices.

25 A. Understood. Again, Nook 1st Edition was 2009. That was

1 before my time. Nook Color was launched in 2010. The Nook  
2 Simple Touch would have launched somewhere in the middle of  
3 2011. Nook Tablet launched November 2011. Nook Glowlight  
4 launched sometime in 2012. I forget the exact month but it was  
5 sometime that year. Nook HD and HD+ launched together in fall  
6 of 2012. And we launched our third generation black and white  
7 reader in 2013. That would be the Glowlight 2d Generation.

8 Q. With respect to any of these devices, were any of them not  
9 considered to be dedicated ereader devices?

10 A. In general, I would say that the product families and the  
11 general intent of how we designed our products was to really  
12 offer users with a compelling ecosystem experience. When I say  
13 ecosystem in this case, it is obviously cloud-driven. But it  
14 also is about making the widest range of content available for  
15 every single device.

16 While our core focus we developed on each product was  
17 reading and making sure that reading was a first party  
18 experience was very heavily optimized and just presented a  
19 great experience, we also offered applications, movies,  
20 magazines, catalogs, any type of content that we felt was  
21 important.

22 That was mostly driven by the premise that, again, we  
23 wanted to have our users purchase digital content from us from  
24 the cloud, or through the cloud, and then access it or enjoy it  
25 across as many end points, if you will, whether it is a Nook



device, a Nook application, or the website, where possible.

Q. Did any of these developments that you just described in connection with Nook products result in any patents or patent applications that you know of?

MR. CABRAL: Objection, your Honor: Relevance.

THE COURT: I can't tell whether it is relevant until the next question is put. You can answer the question that has been put with a yes or no. The question was, did any of these developments that you have just described in connection with the Nook products result in any patents or patent applications that you know of? Yes or no.

A. Yes.

THE COURT: Put another question.

Q. Did any of those patents involve any of the features, as you understand it, that are involved in this case?

A. Yes.

Q. Which feature are you aware of that Barnes & Noble has filed a patent application with respect to?

MR. CABRAL: Same objection, your Honor: Relevance.

THE COURT: No, I'll allow it. I think it is appropriate background. I agree that it shouldn't be pursued at any length, but I will allow that question to be answered. The question was, which feature are you aware of that Barnes & Noble has filed a patent application with respect to among the ones that are involved in this case?

1 A. One of the patent applications would be the Lend Me  
2 feature.

3 MR. EDERER: Your Honor, if I could show the witness  
4 the documentation? I believe the patent application is  
5 actually on plaintiff's exhibit list.

6 THE COURT: Go ahead.

7 Q. Showing you, Mr. Mulchandani, Plaintiff's Exhibit 195 for  
8 identification and Defense Exhibit 863, can you identify those  
9 documents?

10 A. From what I can see, this seems to be a patent application  
11 and a notice of allowance of patent application.

12 THE COURT: Which one are you referring to, by number?

13 THE WITNESS: PTX-195 and --

14 THE COURT: Is which?

15 THE WITNESS: Is the U.S. patent application. The  
16 notice of allowance is Defense Exhibit number 863.

17 MR. CABRAL: Objection. Defendant's Exhibit 863 is  
18 not on the exhibit list.

19 THE COURT: He hasn't offered it yet.

20 MR. EDERER: I move the admission.

21 THE COURT: Let's take them one at a time. Any  
22 objection to 195, Plaintiff's 195?

23 MR. CABRAL: No, your Honor.

24 THE COURT: 195 is received.

25 (Plaintiff's Exhibit 195 received in evidence)

1 THE COURT: Now 863, you say it is not on the list of  
2 exhibits?

3 MR. CABRAL: Your Honor, from the face of the  
4 document, it appears the document was mailed on October 2nd.  
5 That would be after the exchange of exhibits.

6 THE COURT: My question is, is it on the list of  
7 exhibits? Yes or no.

8 MR. CABRAL: No, your Honor.

9 MR. EDERER: Your Honor, this document was not  
10 actually received until after the exhibit list was exchanged.  
11 It's a notice of allowance that just issued this month. As  
12 soon as we received it, we provided it to counsel.

13 THE COURT: Did you tell them that you were going to  
14 add it to the exhibit list?

15 MR. EDERER: Yes.

16 THE COURT: Back to plaintiff's counsel. You were  
17 given notice on this?

18 MR. CABRAL: Yes, your Honor. It looks like it was  
19 communicated by email.

20 THE COURT: If that is the only objection, the  
21 objection is overruled. 863 is received.

22 (Defendant's Exhibit 863 received in evidence)

23 Q. Mr. Mulchandani, last week we heard testimony from a  
24 gentleman named Sudeep Narain. Am I saying that right?

25 A. Yes.

1 THE COURT: No, that is never a proper question. I  
2 will not have any witness asked to comment on the testimony of  
3 any other witness, ever. Put another question.

4 Q. Do you know Sudeep Narain?

5 A. Yes, I do.

6 Q. Who is he?

7 A. He used to be a software developer on my team.

8 Q. What was his area of responsibility?

9 A. He worked on many features of the product, including the  
10 Lend Me feature.

11 Q. Is Mr. Narain one of the named inventors on the patent  
12 application that has just been received?

13 A. Yes, he is.

14 Q. Mr. Mulchandani, you are aware that in this case the  
15 plaintiff, ADREA, is accusing various features of the Nook  
16 devices as infringing various patents that are owned by ADREA.  
17 Are you aware of that, sir?

18 A. I am.

19 Q. What features do you understand are being accused?

20 A. I believe there is three or four main areas. I believe one  
21 of them is the Lend Me feature, the shop application, the  
22 purchase flow, and security.

23 Q. Are you familiar with how each of those features works from  
24 an operational standpoint?

25 A. Largely, yes.

1 Q. How are you familiar with that?

2 A. My teams were responsible for developing these features  
3 while I was part of the Nook organization.

4 Q. Let's first talk about the lending feature, the one that is  
5 called Lend Me. Are you familiar with that feature?

6 A. Yes.

7 Q. From a consumer's perspective, how does that feature work?

8 A. In high-level terms, if you are a Nook account holder and I  
9 had a Nook account, you would be able to, for titles that the  
10 publisher allows, you would be able to offer a book to me for a  
11 certain period of time.

12 Q. How long is that period of time?

13 A. It's 14 days.

14 Q. Can you only loan books on Nook devices or can you loan  
15 books in other ways?

16 MR. CABRAL: Objection, your Honor. Can we approach?

17 THE COURT: Sure.

18 (Continued on next page)

19

20

21

22

23

24

25

(At the side bar)

MR. CABRAL: This testimony relates to motion in limine 7, which was deferred up until this point. The case involves only the lending feature used on the Nook devices. The question relates to how you can use the lending feature on other platforms that are not accused, for example, the website, the application, etc. Because this case only relates to lending on the Nook, we move to exclude this evidence as being confusing, because evidence of nonaccused functionality configurations is not relevant to this case, irrelevant to infringement in this case, and we think it is going to be misleading to the jury.

MR. EDERER: The whole point is that the system being accused is an account-based system and operates completely differently from the system covered in the patent. We need to be able to explain to the jury what that means. We actually opened on that particular point. It is an account based system that can be accessed from a number of different end points, as Mr. Mulchandani has already said.

I do intend to cover the device-to-device part of it. I also think I should be able to cover and we should be able to explain to the jury that it is an account-based system. If we can't do that, then they are not going to really fully understand the point we are trying to make, the differences between the two systems.

MR. CABRAL: I think the point they are trying to make is to distract attention away from the Nook infringement. We made very clear in our summary judgment briefing what we are not accusing, including the website and the shop application.

THE COURT: I think the way to handle this is that as you put a question about a particular aspect, either say whether it is an accused aspect or a nonaccused aspect, so the jury can on the one hand see the broader operation that you want to bring out but also not be confused as to what is accused and what is not accused.

MR. EDERER: That's fine.

(Continued on next page)

(In open court)

MR. EDERER: There is a pending question, your Honor.

THE COURT: The question was, can you only loan books for Nook devices or can you loan books in other ways?

MR. EDERER: Would you like me to --

THE COURT: Put a new question. The subject of the side bar didn't relate so much to that as to other issues.

BY MR. EDERER:

Q. Mr. Mulchandani, just to be clear, the plaintiff has indicated in this case that they are only accusing the loan feature or the lending feature as it relates to a device-to-device loan. Do you understand that?

A. Understood.

Q. I am going to ask you some questions about the lending feature not only from a device-to-device standpoint but also from the standpoint of a device to another end point that may be held by a Barnes & Noble account holder. I will try to indicate, as I ask those questions, which of those circumstances I'm asking you about.

My first question has to do, just broadly speaking, with the manner in which the lending feature works and whether it can be used across various Nook or Barnes & Noble end points, as you explained them before, with the understanding that not all of those end points are being accused.

MR. CABRAL: Objection, your Honor. Under 403 it is



1 confusing.

2 THE COURT: No, I'm going to allow it. I think it is  
3 useful to put it in context to the jury.

4 MR. EDERER: Thank you, your Honor.

5 THE COURT: As counsel just pointed out, not all these  
6 aspects are aspects that are accused of violating or infringing  
7 the patent. Counsel will point out which ones are and which  
8 ones are not. What he is trying to elicit from this witness is  
9 sort of how the whole thing works together so you can get the  
10 overall context.

11 Go ahead, counsel.

12 BY MR. EDERER:

13 Q. Can you explain, Mr. Mulchandani, in general terms whether  
14 the lending feature is available across different end points,  
15 not just device-to-device but other end points within the  
16 Barnes & Noble system.

17 A. Sure. As I mentioned earlier, our approach towards our  
18 features was, again to use the cloud as kind of the centerpiece  
19 of the system. Lend Me was offered as a feature for customers  
20 who came to our website and had accounts. It was offered as a  
21 feature for Nook device holders and was also made available for  
22 users who downloaded our Nook application on their phones or  
23 tablets.

24 Q. Is it also available for customers who only access their  
25 Barnes & Noble account on the Barnes & Noble website?

1 A. Yes.

2 Q. Now let's start out with a device-to-device example. Let's  
3 say that both you and I have Barnes & Noble accounts and we  
4 both own Nook devices and that I would like to lend you an  
5 electronic book that I purchased. OK? That will be what we  
6 just characterized here as the accused situation. What is the  
7 first thing that I would do in order to start that process?

8 A. The process would in this case have to be entirely  
9 initiated by you. You would have to use your Nook device,  
10 access your library of purchased content, and discover a title  
11 that offers or is available as a lendable title. From the  
12 screen, on the device there is usually an instruction or a  
13 badge that is provided to the user to say that it is lendable,  
14 so it is visually presented.

15 Q. If I could stop you right there. Are all books within  
16 Barnes & Noble's system lendable?

17 A. No. That was based on publishers. They would define which  
18 ones were or were not lendable.

19 Q. Let's say now I found a lendable book and I want to make a  
20 loan offer to you. What is the first step that I have to  
21 engage in?

22 A. Skipping some of the front-end steps, let's assume you are  
23 on a book that is lendable. From that screen you would tap a  
24 button which says "Lend Me." You will tap that button, and  
25 that would bring up a second screen, which would allow you to

1 initiate the loan process.

2 Q. If I tapped that second screen, operationally what happens  
3 next?

4 A. On the second screen I believe you would be asked to enter  
5 either the email or some identifier of the person you wished to  
6 loan your book to. You would enter those credentials and  
7 effectively initiate the loan or the lend request.

8 Q. What happens to the lend request at that point?

9 A. The lend request is sent to the cloud. The cloud  
10 effectively processes the request to confirm that a lend offer  
11 has been initiated by you. One of the first steps is that it  
12 effectively removes your rights to access that book from your  
13 account so that you are no longer able to access or open that  
14 book on any end point.

15 Q. At this point in time is my device talking to your device  
16 directly?

17 A. At no point is your device ever talking directly to my  
18 device.

19 Q. How are we talking to each other?

20 A. It's always through the cloud.

21 Q. Now that the loan request has been sent to the cloud, what  
22 happens next?

23 A. Again, once the cloud has confirmed the request that it  
24 received from the device and it has removed your rights to  
25 access that book from, as we call it, your locker, then I will

1 receive a notice from the Nook cloud effectively indicating to  
2 me that you have made a book available to me under a loan  
3 window.

4 Q. How does that manifest itself on your device, if at all?

5 A. In the device-only case, I will receive a notification,  
6 it's a Y promptly on the device, that would intimate to me that  
7 a message has come in. When I click on that, I will  
8 effectively be presented with a screen that would tell me the  
9 details of what you have loaned to me. At that time I can take  
10 some action.

11 Q. What action can you take?

12 A. After reviewing the contents of the loan request, I can  
13 choose to accept or I can also choose to reject your offer.

14 Q. Let's say you like the book that I'm offering to loan to  
15 you and you wish to accept. What happens then?

16 A. If I like the book you are offering, then I would likely go  
17 ahead and accept the offer. As a consequence of me accepting  
18 the loan offer, then the device sends a message to the cloud  
19 confirming that I have accepted the offer.

20 Q. What does the cloud do with that information at that point?

21 A. One of the first steps it takes is it starts a clock. It  
22 effectively initiates this 14-day window I spoke of earlier.

23 As I mentioned earlier, once the clock has been started on the  
24 cloud, then the cloud takes a second step of effectively  
25 entitling, as they call it, or adding the book that you have

1 loaned to me to my account. It is effectively an official  
2 transfer into my account as a second step.

3 Q. At this point in time where the clock is starting on the  
4 cloud, has your Nook device downloaded or stored the electronic  
5 book?

6 A. No.

7 Q. That doesn't happen until later?

8 A. That is correct.

9 Q. What would the cloud do next, after it starts the clock?

10 A. Once my account has been updated with the rights to gain  
11 access to that book, then the cloud will send a notification to  
12 the device with a few different pieces of information. One is  
13 the cloud will effectively tell the device that now it has the  
14 rights to access this piece of information. It conveys a  
15 license file, which is effectively a decryption key which the  
16 device will need downstream to open the book.

17 Cloud also informs the device of a specific URL or  
18 location on the Internet from where the device can separately  
19 fetch the book, if you will, or the encrypted book. That is  
20 effectively what the cloud is messaging to the device, and in  
21 that step basically the device is trying to make sure that that  
22 information is received.

23 Q. When you say that the cloud is sending that information to  
24 the device, that is to your device, correct?

25 A. That is correct.

1 Q. As the acceptor of the loan offer?

2 A. That's correct.

3 Q. At this point in time has your device downloaded or stored  
4 the book?

5 A. Not at this time.

6 Q. Is the clock running?

7 A. Yes.

8 Q. Once your device receives the information that you just  
9 described, what happens next?

10 A. Once the device has successfully received the license key  
11 as well as the URL or the location that I mentioned where the  
12 encrypted book is located, the device effectively creates a  
13 session to download the encrypted book from this location it  
14 was given from the cloud.

15 Q. What happens when that download takes place?

16 A. First, the device has to make a connection to this location  
17 that I mentioned, and the device will attempt to download the  
18 entirety of the book and will attempt to basically effectively  
19 get the entire set of bytes down to the device.

20 Q. What is the location that you mentioned where the device  
21 sends a URL or interacts with a URL in order to try to download  
22 the book? What is this location?

23 A. We use a third party called Akamai, A-K-A-M-A-I. It's the  
24 equivalent of -- we used it for file storage for books.

25 Q. Is it the case that your device sends a message of some

1 kind to Akamai in order to get the download process started?

2 A. It wouldn't necessarily send a message. I would say it  
3 already has the specific location it needs to access on Akamai.  
4 Effectively, what the device would be trying to do is access  
5 that specific location and pull down the contents of the file  
6 that's stored at that specific location.

7 Q. When the device is interacting with Akamai as you just  
8 described, is the book yet downloaded or stored to the device?

9 A. Until the last byte has been downloaded, I would say that  
10 the bytes of the book are being downloaded, but the entire book  
11 is not available until the final byte has been transmitted and  
12 received on the device.

13 Q. During this period of time that you just described, is the  
14 clock still running?

15 A. The clock on the cloud continues to run.

16 Q. Am I correct that all of these steps have to occur after  
17 you hit the accept button and before your Nook actually stores  
18 the loaned book?

19 A. That is correct.

20 Q. When in relation to all of these steps does the lending  
21 period start to run?

22 A. Again, the lending period started when the user pressed  
23 "accept."

24 Q. Before many of these steps actually occurred, correct?

25 A. That's correct.

1 Q. Once all of these steps are performed and the book is  
2 actually downloaded and stored to your device, how long at that  
3 point would you have access to the stored book on your device?

4 A. It's whatever time is left on your server with regards to  
5 the 14-day window.

6 Q. 14 days minus whatever time has elapsed?

7 A. Absolutely.

8 Q. Do you have to open the book in order for the lending  
9 period to run?

10 A. No. The clock on the server continues to run irrespective  
11 of what user action is performed.

12 Q. What happens to the lending period if you never open the  
13 book?

14 A. The cloud continues to run the clock. If the user never  
15 opens the book and the 14-day window expires on the cloud, the  
16 user loses the right to the book.

17 Q. How quickly will your Nook device download the book after  
18 the loan is first accepted, in ordinary circumstances?

19 A. It's hard to put an exact time on it, but I would say that  
20 we obviously strive to make sure that these independent set of  
21 steps that I walked through were performed in the most  
22 expedient manner. From the user perspective, you can easily  
23 see that some of these steps could take place at times in a few  
24 seconds. It could be longer. There really is no guaranteed  
25 window that is offered to the customer.



1 Q. If a download doesn't take place right away, how does that  
2 impact the lending period?

3 A. It doesn't impact the lending period, because, again, the  
4 clock continues to run on the cloud.

5 Q. Under what circumstances could there be an interim period  
6 between the time that the download is requested and it actually  
7 is completed?

8 MR. CABRAL: Objection: Leading.

9 THE COURT: It is leading. I will allow it in this  
10 instance, but be careful of that in future questions. You may  
11 answer.

12 A. Would you mind repeating the question? Sorry.

13 Q. Sure. You testified about the circumstances under which  
14 the download may take place very promptly, within a matter of a  
15 few seconds. Are there also situations where the download  
16 would take place over a longer period of time?

17 A. Yes.

18 Q. What would be the circumstances under which that might  
19 happen?

20 A. The case that I mentioned, for example, in the few seconds  
21 what we call internally as the happy path, where things go  
22 swimmingly well and all these steps that I mentioned just  
23 happen to be completed in a desirable amount of time from a  
24 user perspective.

25 There were situations where on the device you could

1 have instances where you don't have a great wi-fi connection so  
2 the download couldn't take place or it has trouble downloading  
3 the contents of the book. You could also have situations  
4 where, in the event that I'm the person trying to download, my  
5 device is out of storage so I don't have sufficient storage to  
6 even store the contents of the book. There are instances like  
7 that that would impact the ability to complete the transaction,  
8 and it could conceivably take longer.

9 Q. Does the time that it takes to complete the transaction as  
10 you just described have any impact on the lending period?

11 A. Again, it's unrelated. The clock on the server, once the  
12 user has hit "accept," starts and continues to run irregardless  
13 of what issues I may or may not have in terms of downloading or  
14 securing access to that loaned book.

15 Q. The cloud is keeping track of the clock, is that right?

16 A. That is correct.

17 Q. Does the cloud keep track of the point in time when the  
18 book is actually stored or downloaded on the device?

19 A. No, they are completely unrelated. The cloud clock is  
20 something that runs entirely on its own accord, and it doesn't  
21 take into account anything that is happening on the device.

22 Q. From a technical standpoint, can you explain what happens  
23 at the end of the lending period.

24 A. It would be almost a reversal of some of the steps I  
25 described. Again going back to the happy path where everything

1 is running extremely well, the server determines that the loan  
2 window has ended, if you will. At the time the server  
3 determines that, or the cloud, the cloud will revoke my rights  
4 to the book that had been previously loaned to me. At the same  
5 time, the book rights would transfer to your account as it was  
6 originally prior to the lend offer being extended.

7 Q. To be clear, does the time expire on the cloud or on the  
8 device?

9 A. The time expires on the cloud.

10 Q. Would that happen regardless of whether or not the device  
11 is powered on?

12 A. That is correct.

13 Q. Let's assume that the device is powered off at the time  
14 that the clock expires. What happens when you next power on  
15 your device?

16 A. Conceivably, you would see two different things. One is  
17 that when the cloud expires the clock, your access rights to  
18 that piece of content would effectively be removed, which means  
19 that as a user, if you went to the website or Nook apps or  
20 anywhere else, you would not see that book available to you to  
21 be read.

22 On the specific device where I might have downloaded  
23 that book, the loaned book, and assuming I'm in good  
24 connectivity with wi-fi, I would immediately lose my rights to  
25 read that back, which means that either the book would be

1 replaced with the user experience letting you know that you no  
2 longer have rights to this book, or in another event the device  
3 would delete the book from my device so I wouldn't actually  
4 have physical access to it anymore.

5 Q. You testified about a situation where a loan offer was sent  
6 from a device and accepted on a device. OK?

7 A. Yes.

8 Q. Are there circumstances under which a loan offer can be  
9 sent from a device and accepted in another manner?

10 A. Yes.

11 Q. To be clear, as we understand it for purposes of today's  
12 questioning, I'm asking about a situation that plaintiff is  
13 saying is not accused in this case. Can you describe a  
14 situation where a loan offer comes from my device and you  
15 accept it somewhere else besides on your device. Let's say you  
16 don't even have a device.

17 A. A good example of that would be the website case where you  
18 initiate a loan request on your device. I could conceivably  
19 log into my account on the Barnes & Noble website and receive a  
20 notification from you about your loan offer, where I can again  
21 go through the same accept-or-reject process and either gain  
22 access to the content or not.

23 Q. In terms of how the loan offer is operationally  
24 transmitted, is it any different from what you described  
25 earlier with respect to the device situation?

1 A. Again, we use the same cloud infrastructure to manage all  
2 these different end points. I would say that how the clock is  
3 managed and the user has access to the content is exactly the  
4 same.

5 Q. In this particular situation that I just described, when  
6 does the clock start?

7 A. Again, very similarly, if I was at the website and I  
8 reviewed your lend offer and I accepted it, at the time that  
9 our cloud registered my acceptance, the clock would start.

10 Q. Then what happens?

11 A. Then a similar set of steps occur. The rights to open that  
12 specific book would be added to my account. On the website  
13 either the page would refresh or I would get some notification  
14 that the book is now available for me to read. More often, I  
15 think it was read instantly or there was a button that we made  
16 available to the user which they could depress and open up the  
17 book right on the website.

18 Q. To be clear, in this situation you could actually, if you  
19 wanted to, open up and read the book on the website, correct?

20 A. That is correct.

21 Q. After you log in with your account information, and so  
22 forth?

23 A. That is correct.

24 Q. Is the lending period that you just described, the clock  
25 has already started, is that in any way impacted by the point

1 in time you actually access or read the book on your online on  
2 your account?

3 A. It is again unrelated. The server clock is running on its  
4 own accord, and that is driven by the time of acceptance of the  
5 offer.

6 Q. What is it that grant the account the right to access the  
7 book on your online account?

8 A. It was the cloud.

9 Q. What would happen if 14 days passed and you never even  
10 accessed or opened the book?

11 A. Again, the cloud would continue to monitor the clock. Even  
12 if I never as a user received your lend offer or never opened  
13 the book, if you will, after 14 days my rights to that book  
14 would be revoked and it would be returned to you.

15 (Continued on next page)

16

17

18

19

20

21

22

23

24

25

1 Q. Just briefly, one more, what we are calling here today,  
2 unaccused situation. Is there a situation where a loan offer  
3 can be made where a device is not even involved at either end,  
4 offer or acceptance?

5 A. Yes. I think just extending the previous example that we  
6 just covered, I would say that one of the use cases that we  
7 support is a Web site to Web site, if you will, where a URL  
8 user or a customer on our Web site with a Barnes & Noble  
9 account, a Barnes & Noble account holder on our Web site,  
10 through the Web site you can initiate a loan offer and loan a  
11 book to me directly through the Web site, and we can  
12 effectively engage in the same experience.

13 MR. CABRAL: Your Honor, if we can just be clear that  
14 the functionality he was just talking about is not an issue in  
15 this case.

16 Q. Operationally, Mr. Mulchandani, from the standpoint of the  
17 technical aspects, does the operation of the loan offer and the  
18 acceptance thereof, and the expiration of the loan offer, the  
19 clock, does it work any differently than you have already  
20 described?

21 A. That was one of the advantages of our cloud-based system,  
22 is that the system behaves consistently across all these  
23 different use cases.

24 Q. Just to be clear, when does the lending period begin no  
25 matter what form of access you would have to the loan offer?

1 MR. CABRAL: Objection. Asked and answered.

2 THE COURT: I'm sorry?

3 MR. CABRAL: Objection. Asked and answered.

4 THE COURT: Well, it was. I will allow it, but I do  
5 think we need to move this along.

6 You may answer that question.

7 A. I would ask that the question be repeated.

8 Q. I believe the question was, when does the lending period  
9 begin in any of these scenarios that we have just laid out?

10 A. It begins on acceptance of the offer when the cloud  
11 registers the acceptance and starts the clock.

12 Q. So let's talk about the shop feature or shop application.  
13 You mentioned earlier that you understood that this is one of  
14 the accused features in this case, correct?

15 A. Yes.

16 Q. From a consumer's perspective, what is the shop  
17 application?

18 A. The shop application I would say was a purposeful  
19 experience where we wanted to bring a great mobile friendly  
20 experience for users to browse, purchase, and search for  
21 content that we made available, whether it's books, magazines,  
22 videos, catalogues, newspapers.

23 Q. Is the shop application the only way that a Barnes & Noble  
24 account holder can browse your catalogue of books and make  
25 purchases?



1 A. Well, as I mentioned, we wanted to offer and we did our  
2 shopping experience on Nook applications in addition to our  
3 Nook devices. So that would be Windows 8 and Android.

4 Q. In the course of your employment at Barnes & Noble, did you  
5 or your team work on the development of the shop application?

6 A. Yes. My teams were responsible for developing the shop  
7 application.

8 Q. Now, in order to use the shop application, do you need to  
9 be connected to a wireless network?

10 A. Yes.

11 Q. Are the Nook devices pre-configured to connect to a home  
12 network?

13 A. No.

14 Q. So what does a user have to do to connect a Nook device to  
15 a home network when it first purchases it?

16 A. Well, when you buy a brand-new device, it largely comes  
17 from the factory in a powered out state. So I would say that  
18 you first power it on. Then there is what we called an  
19 out-of-book experience, where the user would first have to  
20 connect the device to WiFi just to establish connectivity.  
21 That would be their home WiFi in this case.

22 The second step would be the creation, or they would  
23 enter in their Barnes & Noble credentials. So if they are an  
24 existing customer, they can just enter their log-in password  
25 right on the screen or they can create an account directly from

1 the device.

2 Then we have a few other screens to get them through  
3 the device set-up, after which the device would be ready for  
4 general use.

5 Q. Let's say that I went out and bought a new Nook device  
6 today, would I need to do any of that before I could access the  
7 shop application?

8 A. Yes, you would.

9 Q. Once I did those things, what would I then do to access the  
10 shop application?

11 A. Well, assuming you have completed those steps, and the  
12 device is obviously in working order and charged, you would be  
13 presented with either a button or icon that would allow you to  
14 launch the shop application.

15 Q. What if I already had a Nook device and it was already  
16 configured to my home network, but it's been sitting on my  
17 couch for about an hour. Would I need to do anything before I  
18 can access the shop application at that point?

19 A. I would say for an hour in that case, it's likely that we  
20 would suspend the device, which is just for battery  
21 conservation we would power off the device and just put the  
22 device to sleep. So it is not inconceivable that you would  
23 have to hit the power button just to wake it up, unlock the  
24 screen to get to the screen saver, press N to get to the home  
25 screen, and then launch the shop application.

1 Q. How would I launch the shop application?

2 A. Again, we often made available directly for the user on the  
3 home screen some sort of visual either button or tile, if you  
4 will, that they can launch the shop application.

5 Q. Did you say tile?

6 A. Yes.

7 Q. Is that like an icon?

8 A. Yes.

9 Q. Assuming everything is running smoothly and I depress the  
10 shop icon on my Nook device, what would I see on the screen  
11 after doing that?

12 A. Well, once you launch the shop application, what you would  
13 see is the device in this case would attempt to paint the  
14 storefront.

15 Q. You used the term paint. Can you explain what you mean by  
16 paint in that context?

17 A. Paint would be equivalent of just draw or in this case just  
18 show.

19 Q. What is the shop storefront? What would I actually see in  
20 front of me?

21 A. Well, visually as a user what you would see is a painted or  
22 a set of icons, which is books, magazines, catalogues, videos,  
23 effectively an organized page of content.

24 Q. What can I do on that storefront once I see all of those  
25 things?

1 A. Well, once the storefront is loaded, then the user can  
2 effectively engage in free-form discovery. So they can click  
3 on products that are shown in the shop. They can search. They  
4 can browse different categories of content that we make  
5 available. They are basically are now free to discover any  
6 content they may be interested in from the storefront.

7 Q. Is the shop storefront maintained on the Nook device  
8 itself?

9 A. No. As I mentioned earlier, the way we designed our shop  
10 application was it really levers this master and servant  
11 content that I covered earlier, where the cloud in this case  
12 would be where we stored a lot of the data in the course of the  
13 shop experience. And when the user actually attempted to  
14 launch the shop on the device, the device would attempt to load  
15 the storefront thundercloud and then present it to the user.

16 Q. Other than on a device, and again, I am not quite sure what  
17 is accused or not accused with respect to the shop application,  
18 but I am pointing out to you that I am asking you a question  
19 now about a different way you might access the shop application  
20 other than through a device. Is that possible?

21 A. Yes. We would have Nook applications that would allow for  
22 a similar experience.

23 Q. What do you mean by Nook applications?

24 A. So it would be the user would have an Android phone or an  
25 Android tablet, a third-party product that was designed by

1 someone else, like Samsung or Google in this case, an IOS or  
2 iPad device or iPhone, if you will, produced by Apple, or a  
3 Windows 8 device that was produced by Microsoft or another  
4 Windows 8 product.

5 Q. Can I access the shop storefront through those  
6 applications?

7 MR. CABRAL: Objection. Relevance in the sense that  
8 the application is not at issue in this case.

9 THE COURT: I think defense counsel is not clear on  
10 that. On making that objection, which is perfectly proper, you  
11 have alerted the jury correctly that that is not one of the  
12 points in this case.

13 Q. The question was, can I access the shop storefront through  
14 one of those Nook applications?

15 A. Yes, you can.

16 Q. Now, let's go back to the device scenario where you are  
17 pressing that icon on your device and you're calling up the  
18 shop storefront. From an operational standpoint, what has  
19 actually happened, what is the first thing that the shop  
20 application does in order to find its way onto your device?

21 A. From an implementation perspective, our cloud was just like  
22 any other Internet address that's popular on the Web. So  
23 similar to Yahoo or Google, the Barnes & Noble's cloud also had  
24 a specific address, if you will, that we knew to connect to in  
25 order to download the storefront. So when the user depresses

the shop button on their device, we effectively connect to that URL or Internet destination and then download the content that is appropriate for that device or user.

Q. What is a URL?

A. URL, it's a technical term that's used to describe destinations on the Web. So [www.yahoo.com](http://www.yahoo.com) is a URL, [www.google.com](http://www.google.com) is a URL. It's effectively referring to that specific construct.

Q. Does every Nook device that connects to the cloud in connection with the shop feature, do they use a different URL to reach the cloud or is it the same URL?

A. They use the same URL.

Q. What if I am trying to access the shop feature through my Android device, do I also use the same URL?

A. On Android we use the same URL.

Q. Why is that, that the Nook devices, the applications and other N points, why is it that they use the same URL to reach the cloud in connection with shop?

A. Well, the design intent around how we wanted to develop shop, and again, going back to some of what I mentioned earlier, the aspiration, in terms of how we wanted customers to shop and browse our content, was that we wanted to use our cloud to capture all the essence of a user. So in the case that a user is buying a book from us on a Web site or on an iPhone or on a Nook device, our cloud maintains all that

1 information within itself, as you know, kind of a single user  
2 account.

3           So by maintaining one common URL to where all the  
4 devices or Nook applications are connected to, it actually  
5 allowed us to provide a better personalized and more  
6 appropriate shop on an individual basis. So we basically by  
7 design choice felt that it was better for us to use the cloud  
8 as a more -- have the cloud have more involvement in the  
9 overall process of our shop experience.

10 Q. Now, you testified that when I depress shop button on my  
11 device that the shop application then sends a demand or a  
12 request to the cloud, correct?

13 A. That is correct.

14 Q. Is there a name for this?

15 A. Well, we often refer to it as a GPB command.

16 Q. What does GPB stand for?

17 A. GPB stands for Google Protocol Buffer. It's basically an  
18 efficient way of transmitting data between a device and cloud.

19 Q. So what is a GPB command?

20 A. It's basically an instruction where the device is informing  
21 the cloud that someone has requested to load the storefront for  
22 a particular user.

23 Q. Once the cloud receives this GPB command, is there any way  
24 that the cloud can identify which device sent that command?

25 A. Well, usually as part of the GPB command, the device in

1 question, for example, if it was my device, my device along  
2 with the GPB command would include what we called a device  
3 identifier.

4 Q. Is there any particular way or procedure in which this GPB  
5 command is transmitted to the cloud?

6 A. Well, again, because our shopping experience was  
7 effectively leveraging a fair amount of browser technology, we  
8 did transmit, along with the request, we transmitted the GPB  
9 command using what is called HTTP. Again, in general Web  
10 terms, it's the header that you use when addressing specific  
11 URLs, like Yahoo.com or Google, and in this case it would be  
12 the Barnes & Noble cloud. But we used HTTP to transmit the GPB  
13 command from the device to the cloud.

14 Q. This is all in connection with the shop application,  
15 correct?

16 A. Correct.

17 Q. You mentioned something about a device ID being included  
18 within the GPB command, right?

19 A. Yes.

20 Q. What is the device ID?

21 A. The device ID was, if you recall the case we went through  
22 of setting up a brand-new device, our cloud needs some way of  
23 identifying every single device within the ecosystem. So the  
24 cloud actually, during the process of device registration,  
25 issues a device ID, and the device ID is effectively a token of



1 uniqueness for that specific device in the Barnes & Noble  
2 ecosystem.

3 Q. You also mentioned an HTTP request, and that's the way the  
4 GPB command is transmitted to the cloud, right?

5 A. That is correct.

6 Q. So what information is contained within that HTTP request?

7 A. The HTTP is an open, actually, spec that's governed by kind  
8 of the industry. HTTP generally mandates that you include  
9 certain parts, some Android fields you have to include. We  
10 send up some information, such as model number. At times we  
11 also have to include information so the device could be  
12 identified, like a user agent string. So we included that as  
13 part of the HTTP request to the cloud.

14 Q. Once the cloud receives this HTTP request, what does it do  
15 with the model number that you just mentioned?

16 A. Well, the model number, as I mentioned, was mostly for,  
17 again, for compliance with the HTTP standard and what the cloud  
18 needed to get to support that standard. So the cloud would  
19 effectively just receive the HTTP request, acknowledge it. It  
20 would take the model number information, use it for some  
21 logging and analytics purposes just to confirm that a specific  
22 type of device is connected with the cloud, and then throw that  
23 information away.

24 Q. Does the cloud use this model number to decide what  
25 information to send to the Nook device?

1 A. No.

2 Q. You mentioned earlier a couple of steps ago something  
3 called a device ID, the unique identifier in the device is sent  
4 to the cloud in connection with the activation of the shop  
5 feature. Why did the Nook devices send their device ID to the  
6 cloud?

7 A. Well, again, as I mentioned, I think maintaining a great  
8 user experience for our users was really important to us. So  
9 one of the design paradigms in our shop application was  
10 personalizing as much as possible the storefront for that  
11 individual user. So the device ID was informing the -- again,  
12 one of the front-end tokens. It was leveraged by the cloud to  
13 translate the type of product that the user is coming from into  
14 a different identifier, which would ultimately be used to  
15 effectively paint the storefront.

16 Q. What is this different identifier called?

17 A. Well, internally, once we received the device ID from the  
18 device -- I am talking more from what is happening at the  
19 cloud -- the cloud would convert the device ID received into  
20 what we call the product device ID. So that was an internal to  
21 the cloud two digit code to where the device would be mapped,  
22 and that is what would be used, along with other data, to  
23 effectively respond to the device request.

24 Q. The device request in connection with the shop application,  
25 correct?

1 A. That is correct.

2 Q. So at this point in time has anything been transmitted to  
3 the device yet in connection with the shop application?

4 A. Not at this time.

5 Q. So what does the cloud do with this information, this  
6 product device ID that you just mentioned?

7 A. Well, the product device ID, as I mentioned two digit code,  
8 it effectively allows the cloud -- it's one of the many data  
9 points we use, but it effectively allows the cloud to have some  
10 recognition of the type of device it's speaking to. Because at  
11 times it could be a color product, a black and white display.  
12 Having some awareness of the type of device it's speaking to  
13 could help it paint a more relevant or appropriate storefront  
14 for that user.

15 Q. Again, when you say paint, what do you mean?

16 A. Draw.

17 Q. What you actually visually see?

18 A. What you visually see on the screen.

19 Q. So at some point is information concerning the shop  
20 storefront returned to the device after all of these steps you  
21 just mentioned?

22 A. Yes. Eventually the cloud will effectively on its side  
23 curate all the content that it feels is relevant to draw the  
24 storefront, and it would respond to the device request with a  
25 GPB response.

1 Q. In what form is the information then returned to the  
2 device?

3 A. Well, the GPB response would again include different  
4 bookkeeping information. So it would include what we call  
5 product details. It would actually in some cases have specific  
6 books, magazines, or other types of content that the cloud  
7 feels is relevant to show to the user as part of drawing this  
8 storefront. It could also include a Web page if needed to  
9 paint the storefront.

10 Q. Once the cloud has sent all of that information back to the  
11 device, what happens next?

12 A. Once the -- let's assume the device has received a response  
13 and everything checks out, then the device will attempt to  
14 interpret what it received from the cloud and effectively paint  
15 or show the storefront to the user.

16 Q. What can the user do at that point once the painting takes  
17 place?

18 A. Once the painting takes place, then you pretty much, from a  
19 user perspective, have access to the full Barnes & Noble  
20 digital catalogue, which means from that point on you can start  
21 browsing all the links that we make available to you. You have  
22 a search bar available to use so you can search for any string  
23 or any content that you like. We also try to make sure that we  
24 give users some hints or cues. So we would offer like New York  
25 Times bestsellers or certain things we felt they would be

1 interested in.

2 Q. I believe you testified earlier that your software team  
3 helped develop and build the shop application, correct?

4 A. That is correct.

5 Q. What did you do to develop the shop application as things  
6 evolved and you went along?

7 MR. CABRAL: Objection, your Honor. The testimony is  
8 his team developed it, not the actual witness.

9 THE COURT: I think that was implicit in the question,  
10 but I sustain the objection. Rephrase.

11 Q. What did your team do to develop the shop application with  
12 respect to Nook devices?

13 A. Well, I would say, as I mentioned, our objective within  
14 Barnes & Noble was to build a great reading experience for our  
15 users, and obviously allowing them to discover and engage with  
16 more content new types of content was really important to us in  
17 the entire time I was with the company. So as part of that, I  
18 think we felt that the way to achieve that was to really build  
19 and develop -- and this is from my early days with the  
20 company -- a dynamic storefront that attempted to basically be  
21 as personalized as possible to that user. Because that way it  
22 allows them to engage, discover content that's relevant to  
23 them, broader than being presented to them that they may not be  
24 interested in.

25 Q. So what did you actually use as the foundation for building

1 the shop application?

2 A. Well, to support the use case I described, in terms of the  
3 highly personal dynamic site or storefront in this case, we  
4 knew when we canvassed different technologies that were  
5 available, one of the aspects, just given the fact that our  
6 Nook devices were leveraging Android as its operating system,  
7 one of the capabilities that Android offers is something called  
8 WebView. WebView is effectively a browser engine that gives  
9 you all the support you need to effectively build either a full  
10 Web browser, where you have a navigable bar where you type in  
11 addresses and browse on the Web, or build special purpose  
12 browsers, if you will, for a more curated experience.

13 So we developed shop as a special browser, if you  
14 will, where all we tried to do was give the user the same  
15 flexibility of being able to browse and navigate links, run  
16 searches, but, at the same time, not burdening them with the  
17 logistics or the minutia of having to type URLs to go to  
18 different destinations. We tried to build shop in a way that  
19 would be the equivalent of bookmarking a page in your browser,  
20 where if you go to Yahoo you just bookmark it. So we developed  
21 shop as a special browser to effectively mimic that behavior,  
22 where we took you to the storefront the minute you launched the  
23 app.

24 Q. Did you use WebView in that context?

25 A. Yes, we did.

1 Q. You mentioned that the user in connection with shop doesn't  
2 have to type in a URL to use that application, is that correct?

3 A. That is correct.

4 Q. Does it still have browsing functionality?

5 MR. CABRAL: Objection. Leading.

6 THE COURT: Overruled.

7 A. Yes, it does.

8 Q. You mentioned that the shop application has various links  
9 that you can use and you can click on, correct?

10 A. That is correct.

11 Q. What do you use those links for?

12 A. You basically use those links to navigate within shop. So  
13 you can have a book that you're interested in reading. You can  
14 click on a link that's associated with it or tap on the book  
15 cover itself. It will take you to a more detailed page for  
16 that book. So it may give you more enhanced information --  
17 reviews, recommendations, ratings -- so you can read about what  
18 other people have said about the book, how many star ratings it  
19 has. Then you can navigate back and forth between pages of  
20 content and browse different links and search.

21 Q. Can any of those links lead the user out of the shop  
22 storefront and onto the Internet?

23 A. As I mentioned, our primary objective for shop was to build  
24 a special browser where we try to keep the user -- and more as  
25 a convenience -- navigating links and browsing effectively

1 within the Barnes & Noble digital catalogue. In the course of  
2 developing that feature, we were aware that some of the  
3 capabilities of our shop application, specifically, the rate  
4 and recommend features, put a lot of users to navigate outside  
5 of shop to other designations or Internet addresses.

6 Q. You said something about the rate or recommend feature.

7 What is that?

8 A. On all book products, or effectively all digital products,  
9 I think the social aspect of purchase is a pretty powerful one,  
10 where users want to read about other people's experiences with  
11 a specific piece of content, what they like, dislike, in making  
12 their own purchasing decisions. So one of the features we  
13 offered on a book, regardless of whether the user bought it or  
14 not, was a rate and recommend where they can actually, through  
15 Facebook or Twitter, actually post a recommendation or post  
16 some comment or feedback about a specific book or digital  
17 product, if you will.

18 Q. So I would like to have you perhaps walk me through a  
19 situation where you can click on one of the links in the shop  
20 application and it takes me outside to the Internet.

21 MR. EDERER: And I have here in my hands Defendants'  
22 Exhibit 754 for identification, which I would like to show the  
23 witness, your Honor.

24 Q. Mr. Mulchandani, can you identify Defendants' Exhibit 754?

25 THE COURT: While he is doing that, how much longer do



1 you have on direct?

2 MR. EDERER: 15, 20 minutes.

3 THE COURT: I think we are going to give the jury a  
4 ten-minute break at this time. We have to keep it very short  
5 because we are only going to 4:30, but I think it would be  
6 useful to have a break. We will have a ten-minute break and  
7 call you right back.

8 (Jury exits courtroom)

9 THE COURT: We will resume in exactly ten minutes.

10 (Recess)

11 (Jury present)

12 DEEPAK MULCHANDANI, resumed.

13 BY MR. EDERER:

14 Q. Mr. Mulchandani, before the break I was asking you about  
15 and you testified about some of the links on the shop  
16 application that the user can click on in order to get  
17 information about content for example. Do you recall that?

18 A. Yes, I do.

19 Q. Can any of those links lead the user outside of the shop  
20 storefront and onto the Internet?

21 A. Well, as I mentioned, there were times where the shop  
22 application was, as I mentioned, a special browser optimized  
23 for shopping and discovery. But by virtue of, one of the  
24 features I mentioned was the rate and recommend feature, which  
25 allowed the user or anyone to effectively post a review for

1 some content, or any product we offered for sale digitally, a  
2 review about that product on either Facebook or Twitter. So  
3 through those integrations, we became aware that users were  
4 able to browse sites outside of our shopping experience. We  
5 didn't discourage it, but it wasn't something that we deemed  
6 was core to the shop experience.

7 MR. EDERER: Your Honor, I would like to show the  
8 witness what has been marked as Defendants' Exhibit 754 for  
9 identification and ask if he can identify it.

10 THE COURT: Yes.

11 Q. Can you identify the exhibit?

12 A. This is a Nook HD+ device.

13 Q. Is that one of the devices that you helped develop while  
14 you were at Barnes & Noble?

15 A. Yes, I was very much involved in the development of this  
16 device.

17 MR. EDERER: I move the admission of Defendants'  
18 Exhibit 754.

19 MR. CABRAL: No objection, your Honor.

20 THE COURT: Received.

21 (Defendants' Exhibit 754 received in evidence)

22 Q. Mr. Mulchandani, I am not all that tech savvy, but I am  
23 going to ask whether you can help walk me through an example of  
24 what you just talked about, in terms of clicking on a link,  
25 using the rate and recommend feature and taking the user out of

1 the shop page and onto the public Internet. Can you just walk  
2 me through what you just testified about?

3 A. Sure. I assume the device is pared to WiFi and connected.

4 Q. I certainly hope so.

5 A. Please tap on the power button, which would be on the right  
6 of the device. Press the N button, which is the home.

7 So you see that green fruit in that circle. If you  
8 can touch that, tap it and bring it towards the lock, that will  
9 unlock the device. It seems like you're reading *Pride &*  
10 *Prejudice*. So you may have to end that for now and press the N  
11 button to exit out.

12 Q. The N button being what?

13 A. We used to call it the equivalent of a home button so it  
14 always takes you back to the home screen.

15 Q. "N" stands for Nook?

16 A. Yes.

17 Q. Am I now on the homepage?

18 A. Yes. As I mentioned, you have some links. Specifically,  
19 if you look at the button right, you will see an icon called  
20 "shop" with a little shopping bag. If you tap on that.

21 Q. Press that icon?

22 A. Yes, please.

23 So it goes to the storefront which, as I mentioned,  
24 effectively presenting you with different books and different  
25 types of content that we have available for sale, or Nook makes

1 available for sale.

2 So to show the rate and recommends, if you see the  
3 book behind the Oscar, the second row of books, click on the  
4 left most one with the white cover just as an example.

5 Q. *Born on the Fourth of July*?

6 A. Yes. So as you see on this screen, we just navigated a  
7 link or followed the link to a more detailed page about the  
8 book. Below the full cover of the book you see the stars,  
9 which is really where we post a kind of aggregate rating for  
10 the book. And right below that is a tile of three icons. If  
11 you can click on the middle icon please.

12 Q. Like so?

13 A. Yes. You will see that the second option in the middle is  
14 rate and review. So if you can please click on that.

15 As I mentioned earlier, the motivation here was really  
16 around engaging a social concept around the feature. So we  
17 allowed users to post reviews to Facebook, Twitter or both.

18 So if you don't mind clicking into the Twitter link  
19 there. Now, since you don't have your Twitter account  
20 connected already to your Nook device, it will ask you to log  
21 in with your Twitter log-in or Twitter password.

22 Q. Now I am giving up my personal information here, but I will  
23 go ahead and do that anyway.

24 A. Go ahead. It seems like there is an account already there  
25 that you can use.

1 Q. If I did that right, it will be a miracle.

2 A. There you go. You just need one more confirmation step.  
3 Go to the Twitter link on the page, if you can click that  
4 please. Yes.

5 Q. So now where am I going?

6 A. So now you're connected to Twitter, which basically means  
7 that what the shop application has done is load the Twitter  
8 homepage within the application. So it has effectively browsed  
9 to the Twitter homepage and pulled down the content over the  
10 Internet into the experience of the shop application.

11 So as you can see, I think if you just move your  
12 finger up and down, you can scroll through the Twitter  
13 homepage. And maybe just to follow a link, I am not familiar  
14 with some of these, but I see New York Yankees are there.  
15 Click on the MTA clink.

16 Q. Which stands for Metropolitan Transit Authority for you  
17 nonworkers.

18 A. It seems to be. Again, if you want to just follow, you can  
19 obviously read about the MTA page. This is the Internet page.  
20 If you don't use the device, you can find this. Also, I think  
21 somewhere there you can go to the full homepage of Twitter, if  
22 you want to go external to this page. Now you can load the  
23 entire MTA page. So you're literally browsing within shop,  
24 within the experience, but you're connected to a third-party  
25 page.

Q. So this is the same MTA homepage that I would be able to browse to if I was on a more traditional browser, if you will?

A. If you are on your desktop and you went to the MTA homepage, you would probably see this page.

Q. If I pushed the Yankees icon, I would be able to go to the Yankees homepage, correct?

A. Depending on what navigation the Yankee page allows, it's possible that you could go to the Yankee homepage.

Q. Now, Mr. Mulchandani, finally, as we discussed earlier, one of the patents involved in this case --

THE COURT: I don't think you can really hit on the Yankees Web page because the Yankees don't do any hits anymore.

MR. EDERER: At least we learned that Joe Girardi just turned 50.

Q. As we discussed earlier, Mr. Mulchandani, one of the patents involved in this case is being asserted against a system that Barnes & Noble uses to provide security to books that are going to be purchased by consumers; is that your understanding?

A. Yes.

Q. Are you familiar with that system?

A. Yes.

Q. Did you work on that system when you were at Barnes & Noble?

A. Myself and my team were responsible for developing that

1 system.

2 Q. What is that system called?

3 A. Well, the system is effectively the cloud, is what we  
4 developed, and it uses aspects to secure the content.

5 Q. Is there a term that Barnes & Noble uses in connection with  
6 the intake of books into its system?

7 A. Yes. One of our systems as part of our cloud was a system  
8 that we called ingestion. So ingestion was really a front step  
9 in terms of how we made books available for sale in our  
10 ecosystem, in the sense of when we signed a publisher deal to  
11 offer their books for sale in our visual storefront, ingestion  
12 would be the equivalent of bringing their content into our  
13 system, so we physically receive files or in this case actual  
14 files or bytes into our systems. And at that time we would  
15 process those files into our Nook cloud.

16 Q. What is involved in processing those files into your Nook  
17 cloud?

18 A. Well, the ingestion step would effectively do a certain set  
19 of steps. Number one, just to honor our obligations to the  
20 publisher, where appropriate, we encrypted the books. Once the  
21 books were encrypted, we signed a unique identifier we called  
22 the EAN to those, and those were specifically to identify that  
23 unique book within our cloud, if you will.

24 In parallel to the encryption process, we would  
25 generate some security keys, and the security keys would be

used later in the process when a user attempts to buy the book. At the ingestion phase, all we are doing is generating some decryption keys.

Once that process is completed, the decryption keys are stored securely in our cloud. The book bytes that are encrypted that we receive from the publisher, in the case that it was appropriate, we would then transmit those encrypted books to our Akamai server.

Q. Just to be clear, at what point in this process does Barnes & Noble encrypt the books that it has agreed to protect or secure with its publishers?

A. It's right as the book is going through the ingestion process.

Q. Essentially the first step of the ingestion process once the book is received?

A. Yes. It would be one of the initial steps.

Q. At what point does the book become available for purchase in the Barnes & Noble catalogue?

A. Once the book has completed the ingestion process, in the sense the bytes of the book in encrypted form are available on Akamai and the decryption keys have been stored away, the EAN has been generated, and a few other housekeeping items have been completed, then the book can be made available for sale.

Q. Do the Nook devices play any role in the encryption of the books?



1 A. The Nook devices don't play any role in the encryption of  
2 the books. That's entirely handled by ingestion.

3 Q. Remind us again, what is Akamai?

4 A. Akamai is a third-party company. We used them for the  
5 storage of our books and other content.

6 Q. When the encrypted book is stored on Akamai, does anything  
7 else happen that is related to that book's encryption?

8 A. No. The books remain unchanged while they are stored on  
9 Akamai.

10 Q. Other than this ingestion process that you have just  
11 described, is there any other point in time when books are  
12 encrypted within Barnes & Noble's system?

13 A. No. The ingestion process was the only process we used to  
14 encrypt the books.

15 Q. So after the book has been stored on Akamai and made  
16 available for purchase, what happens when a user decides to  
17 purchase a book on a Nook device for example?

18 A. Well, when the user, for example, wants to purchase a book,  
19 they obviously go to their device, in the case that they are  
20 using a device, and they click on the buy button for that  
21 appropriate title. That buy transaction effectively  
22 immediately transmits the user intent to the cloud where the  
23 purchased transaction is registered.

24 Q. Then what happens after that?

25 A. Once the cloud receives the purchased transaction, in the

1 case that nothing goes wrong, so just again conceivably the  
2 happy path here, the cloud will respond to the device with a  
3 few pieces of information. One will be the decryption key that  
4 I previously mentioned was generated during ingestion. The  
5 second piece of information the device will receive -- and all  
6 this is being done securely so that no one can tamper or  
7 effectively change the contents of this message. So the  
8 decryption key. And then the second piece of information the  
9 cloud sends to the device is a URL or a location identifier of  
10 that specific encrypted book on Akamai.

11 Q. You mentioned that these two pieces of information, the key  
12 and the URL, are sent to the device in a secure manner,  
13 correct?

14 A. That is correct.

15 Q. Is there a name for that process whereby these pieces of  
16 information are transmitted to the device?

17 A. So earlier I spoke of HTTP as being used to transmit data  
18 back and forth between the device and cloud just to use common  
19 Web parlance. We used SSL, secure sockets layer, which again  
20 is what is traditionally used in Web applications for securely  
21 transmitting data.

22 Q. So, therefore, the decryption key and the URL, the location  
23 URL, are therefore transmitted to the device through SSL, is  
24 that correct?

25 A. That is correct.

1 Q. And what happens next after the Nook device has received  
2 the decryption key and the URL?

3 A. So once the device has successfully received both pieces of  
4 information from the cloud, then it effectively keeps the  
5 decryption key aside, and what it attempts to do is initiate a  
6 download request to Akamai. So it takes the information that  
7 the cloud provided in terms of the URL, where the specific book  
8 bytes are located, and it effectively engages in a download  
9 request to the Akamai server.

10 Q. When the book is downloaded from Akamai, what format is it  
11 in?

12 A. At the time of ingestion, so just talking about standard  
13 copyrighted books, we often brought it in in a format called  
14 EPUB2, which is a format that usually the publisher sends us  
15 these books in. At the time we receive them from Akamai, they  
16 are still EPUB2 books, it's just that they are encrypted. So  
17 the underlying conscribe doesn't change of the book, it's just  
18 that the additional protection is just encryption.

19 Q. When the book is received from the device from Akamai, what  
20 happens at that point?

21 A. The device will effectively pull down the entire book to  
22 the device. Once that request has been completed and the book  
23 is successfully downloaded, then the device is available to be  
24 read by the user.

25 Q. Does the device transmit any keys in this entire process?

1 A. No. The device in this case is purely just acting as a  
2 servant of the cloud, where it's only receiving but never  
3 sending.

4 Q. Does the device ever encrypt anything?

5 A. No.

6 Q. Now, after the book is ingested, received and stored, it  
7 can then be purchased, correct?

8 A. Yes.

9 Q. How does the process of purchasing a book occur on a Nook  
10 device?

11 A. So again, from an N user perspective, I would navigate to  
12 the shop storefront, find the appropriate book or content that  
13 I am interested in purchasing, and I would depress the buy  
14 button that's associated with that piece of content.

15 Q. So if you look up on the screen, we were looking at *Born on*  
16 *the Fourth of July* before. Do you see that?

17 A. I do.

18 Q. You just mentioned a purchase button. Can you point out to  
19 us where that resides on the screen?

20 A. It's the button that says buy, dollars --

21 Q. Buy in this case \$10.49?

22 A. Sorry. My eyes are bad.

23 Q. I don't think they are. I have a better look at it than  
24 you do.

25 A. That button is effectively the purchase button. So if you

1 depress that button, it should lead to a book being purchased.

2 Q. If the user wants to buy the book, is there any information  
3 about the book that is included in that purchase button?

4 A. Yes. So because you want to offer the user with as  
5 immediate of a purchase experience as possible, we preloaded  
6 that button with all the information that the cloud would need  
7 to complete that transaction.

8 Q. What would that include?

9 A. Well, the button included information like the EAN, what  
10 the product identifier is, the unique one that I talked about  
11 earlier that's assigned during ingestion; product details with  
12 regard to the title, the synopsis, any metadata that would help  
13 the cloud in completing that transaction. So that's already  
14 available to the device at the time this page is painted.

15 Q. So if I depress that buy button, what happens next?

16 A. So if you depress that button, a transaction is immediately  
17 sent up to the cloud. The device doesn't need to do any more  
18 look-ups or steps. Once you have confirmed it, it will send  
19 the transaction request to the cloud and purchase that book for  
20 you.

21 Q. Who is actually selecting the book for purchase?

22 A. The user.

23 Q. Does the device have to do anything in terms of looking up  
24 any information about the book in order to execute the purchase  
25 transaction?

1 A. At the time the transaction is being executed, all the  
2 information the device and the cloud needs is already contained  
3 within that button.

4 Q. What is the device's involvement in selecting a book to  
5 purchase?

6 A. There is none. It's purely the user's.

7 MR. EDERER: No further questions, your Honor.

8 THE COURT: Cross-examination.

9 MR. CABRAL: With your permission, I would like to  
10 bring some documents up to the witness.

11 THE COURT: All right.

12 MR. CABRAL: With your permission, I would like to  
13 give you the documents as well.

14 THE COURT: That's fine.

15 (Continued on next page)

1 CROSS-EXAMINATION

2 BY MR. CABRAL:

3 Q. Good afternoon, sir.

4 A. Good afternoon.

5 Q. You left Barnes & Noble earlier this year, correct?

6 A. That is correct.

7 Q. Before we get into your employment history and your titles  
8 at Barnes & Noble, I want to ask you a couple of questions  
9 about some of the documents you just spoke about with Mr.  
10 Ederer. Is that all right?

11 A. OK.

12 Q. If you could look at Plaintiff's Exhibit 195. Do you have  
13 that in front of you? That's the patent application.

14 A. I do.

15 Q. This patent application was filed in October 2010, is that  
16 right? Maybe I can help you out a little bit there. If you  
17 look on the left-hand side, do you see the left-hand column of  
18 that document?

19 A. Yes, I do.

20 Q. Under the title "Related U.S. Application Data," do you see  
21 that?

22 A. I do.

23 Q. It refers to a continuation of an application and it states  
24 an application number. Do you see that?

25 A. I do.

1 Q. It says that application was filed on October 19, 2010, do  
2 you see that?

3 A. Yes.

4 Q. Is that your understanding of when this application was  
5 filed?

6 A. I was generally aware that the application was filed during  
7 my tenure with the company. I don't recall the specific dates  
8 as to when.

9 Q. Do you have any reason to doubt that this application was  
10 not filed on October 18, 2010?

11 A. No.

12 Q. Are you aware that one of the patents in this case that was  
13 developed by Discovery also relates to ebook lending?

14 A. I'm not familiar with the specific patents in question, but  
15 I believe that lending is a specific use case.

16 Q. You never read the Discovery lending patent at issue in  
17 this particular litigation, is that right?

18 A. That is correct.

19 Q. Are you aware that that Discovery patent issued three years  
20 earlier, in 2007?

21 A. I was not.

22 Q. You have never compared the Discovery lending patent to the  
23 patent application that we are viewing here as Plaintiff's  
24 Exhibit 195, is that right?

25 A. No, I have not.



1 Q. I would like to direct your attention to Defense Exhibit  
2 863, which is the notice of allowance. Do you see that?

3 A. I do.

4 Q. If you can turn to page 3. I apologize. There are  
5 actually a couple of page 3s on this one. After you get to the  
6 notice of allowability, there is another page 3 on there. At  
7 the top of the page it says, "Please amend the claims as  
8 follows." Do you see that? It's right up on the screen right  
9 now.

10 A. I will quickly navigate there. I see it.

11 Q. Are you familiar with the invention that actually became  
12 the issued claims in this notice of allowance here?

13 A. No, I'm not familiar with it.

14 Q. If you look down to the second step of this particular  
15 claim 1 here, do you see the line at the paragraph that begins  
16 with the word "Generating"?

17 A. OK.

18 Q. It talks about generating a lending notice, do you see  
19 that?

20 A. Yes, I see it.

21 Q. Then it talks about in the next line wherein the lending  
22 notice comprises an email, do you see that?

23 A. I do.

24 Q. The next paragraph begins with the word "transmitting." Do  
25 you see that word?

1 A. I do.

2 Q. That line refers to transmitting an email to the lendee, do  
3 you see that?

4 A. Yes, preventing access to the lender, I see that.

5 Q. Is it your understanding that the claims at issue in this  
6 notice of issuance that we are looking at here in Defense  
7 Exhibit 863 involved the generating and transmitting of email?

8 A. Again, I have not read this document in its entirety, so I  
9 wouldn't be able, without a more thorough review, be able to  
10 comment.

11 Q. Do you know if generating and sending email has any  
12 relevance to the Discovery lending patent at issue in this  
13 case?

14 A. I believe that email is used as a mechanism to communicate  
15 some aspects of the loan request.

16 Q. I'm not referring to the Barnes & Noble patent application.  
17 I'm referring to the Discovery patent, the ebook lending patent  
18 that you said you never reviewed. Is it your understanding  
19 that email, sending email, has anything to do with that patent,  
20 or do you know?

21 A. I wouldn't be able to comment.

22 Q. I want to talk about your time at Barnes & Noble now, if I  
23 could. OK?

24 A. OK.

25 Q. Prior to your departure, you were the vice president of

1 software engineering at Barnes & Noble, is that right?

2 A. That is correct.

3 Q. You held that vice president position in the Nook Media  
4 Division of Barnes & Noble, right?

5 A. That is correct.

6 Q. In your role I believe you testified you had over a hundred  
7 people reporting to you, is that correct?

8 A. That is correct.

9 Q. One of those individuals was a gentleman named Sudeep  
10 Narain, is that right?

11 A. That is correct.

12 Q. He was a software developer on your team, correct?

13 A. That is correct.

14 Q. His title was principal architect, is that right?

15 A. I believe so.

16 Q. Were you Mr. Narain's boss?

17 A. I was.

18 Q. Do you remember being deposed in this case?

19 A. Yes, I do.

20 Q. It was last year, right?

21 A. I don't remember the exact date, but yes.

22 Q. In fact, I took your deposition --

23 A. Sometime last year. Yes, that's where I met you.

24 Q. Prior to your deposition, you spoke to Mr. Narain, is that  
25 right?

1 A. That's correct, yes.

2 Q. You reached out to Mr. Narain to refresh your recollection  
3 about certain functional capabilities of the Nook products, is  
4 that right?

5 A. I just wanted to firm my understanding of some of the  
6 features.

7 Q. One of the things you talked about with Mr. Narain was how  
8 the Nook devices communicate with the Barnes & Noble cloud as  
9 that relates to the lending feature, is that right?

10 A. I believe that was one of the topics we covered.

11 Q. We are talking about the word "cloud" here. We are talking  
12 about a bunch of networked computer servers used for some sort  
13 of a centralized storage, is that accurate?

14 A. It's probably not centralized storage. It's more the user  
15 accounts, the information, the data, all that would be the  
16 cloud.

17 Q. Of your team of over a hundred people, you chose to speak  
18 specifically with Mr. Narain, right?

19 A. That is correct.

20 Q. To prepare you for the deposition, that is?

21 A. That is correct.

22 Q. The reason you spoke with him or chose to speak with him is  
23 because he was the most up to date regarding how the lending  
24 feature worked, is that right?

25 A. That was my understanding at the time.

1 Q. Of all the people on your team, correct?

2 A. That's correct.

3 Q. You thought that because of the type of work he's done in  
4 the past, right?

5 A. That is correct.

6 Q. Specifically, the type of work he's done with the lending  
7 feature used on the Nook devices, correct?

8 A. That is correct.

9 Q. Is it fair to say that Mr. Narain knows more information  
10 about the lending feature on the Nook devices than you or any  
11 of the other members on your former team? I'll tell you what,  
12 let's make the question a little easier so you don't have to go  
13 through a hundred people in your head. Is it fair to say that  
14 Mr. Narain knows more about the lending functionality on the  
15 Nook devices than you do?

16 A. I would say he may have a little bit more specific  
17 knowledge with the specific code.

18 Q. I want to talk a little bit about the actual functionality,  
19 if we can. The lending feature that is offered on a Nook  
20 device, that is called Lend Me, is that right?

21 A. That's correct.

22 Q. That's L-E-N-D capital M-E?

23 A. Yes.

24 Q. The lending feature was available or has been available on  
25 the Nook devices since the release of the Nook 1st Edition in

1 2009, correct?

2 A. Correct.

3 Q. You started at Barnes & Noble in January 2010, right?

4 A. That is correct.

5 Q. You started after Barnes & Noble had already begun selling  
6 devices with the lending functionality, correct?

7 A. That is correct.

8 Q. I take it you were not involved in the development of the  
9 lending functionality, is that right?

10 A. It's probably better to say that I wasn't involved in the  
11 initial development of the feature. But obviously, subsequent  
12 to me coming on board with Barnes & Noble, by virtue of the  
13 fact that the software engineering team reported to me, that  
14 for future products I was involved in any ongoing development  
15 and enablement of this feature.

16 Q. I'll ask the question slightly differently, then. Is it  
17 fair to say you were not involved in the initial development of  
18 the lending feature?

19 A. Yes. That was before my time with Nook.

20 Q. In your binder I want to turn your attention to several  
21 exhibits. That's that big binder right in front of you there.  
22 What I want to direct your attention to is Exhibits 19, 21, 24,  
23 26, 28, 29, 31, and 33. It might be easier to look at the  
24 table of contents there. Then you can flip to the actual  
25 documents if you need a moment to take a look. OK?

1 A. OK. To clarify, you mentioned 19 through 33?

2 Q. It was 19, 21, 24, 26, 28, 29, 31, and 33.

3 A. Got it.

4 Q. That would be tabs 5 through 12 in your binder.

5 A. I see it.

6 Q. Do you recognize these documents as the user guides for the  
7 Nook devices sold by Barnes & Noble?

8 A. They seem to be.

9 Q. Is it correct that you learned about the Lend Me feature by  
10 reading these user guides?

11 A. It's true my initial understanding of these features came  
12 from the user guides.

13 Q. Isn't it the case that most of your functional  
14 understanding of the lending feature came from these user  
15 guides?

16 A. I would say that from a user perspective it was very  
17 important for me to understand how in the general case we were  
18 expressing our features to end customers. But internally,  
19 obviously, where the need arose, I basically did dive into the  
20 specific design or implementation of the features where  
21 necessary. So, I did familiarize myself with this feature over  
22 the course of my tenure with Nook and, where needed, got into  
23 specifics with my engineering team as appropriate.

24 Q. We talked about your deposition a few moments ago, do you  
25 recall that?

1 A. Yes.

2 Q. You testified under oath at that deposition, correct?

3 A. That is correct.

4 MR. CABRAL: If I can, I would like to identify for  
5 the Court several lines from Mr. Mulchandani's deposition.

6 THE COURT: It won't do me any good if you don't give  
7 me a copy of the deposition. OK, go ahead.

8 Q. I would like to direct your attention to page 75 of the  
9 deposition transcript, lines 14 through 21.

10 A. Is that something --

11 THE COURT: Hold on. You want to read those?

12 MR. CABRAL: Yes, your Honor.

13 THE COURT: Any objection?

14 MR. EDERER: Same objection that appears in the  
15 document.

16 MR. CABRAL: Your Honor, may I proceed?

17 THE COURT: That objection was to the question. The  
18 portion of the answer that he is relying on here is  
19 independent, has independent evidentiary value regardless of  
20 the wording of the question. The objection is overruled. Go  
21 ahead.

22 MR. CABRAL: Thank you, your Honor.

23 Q. I am going to read you a portion of your deposition  
24 transcript, if that's OK.

25 A. Please.



1 Q. "Q. Are you aware of any documents describing the  
2 operation of the Lend Me feature?

3 "A. Again, I wouldn't be able to qualify whether such  
4 documents, you know, what exists, but I would say that most of  
5 my functional understanding of the feature has come from a user  
6 guide."

7 That was your testimony at your deposition, do you  
8 agree with that?

9 A. Seems to be.

10 Q. I'll ask you the same question I asked you just a few  
11 moments ago. Is it fair to say that most of your functional  
12 understanding of the lending feature came from reviewing the  
13 user guides for the Nook devices?

14 A. As I qualified, I think the way that I have come to  
15 appreciate the feature from a user perspective is definitely  
16 the user guide. Again, the user guide is not an embodiment of  
17 how we design or architect or implement the feature.

18 Q. You are not aware of any other technical documents relating  
19 to the design or development of the Lend Me feature other than  
20 these user guides that we put in front of you, is that right?

21 A. To the best of my knowledge, I just used the user guide. I  
22 wasn't aware of any other documents.

23 Q. These user guides were created by individuals at Barnes &  
24 Noble with knowledge regarding how the Nook devices worked, is  
25 that right?

1 A. I believe so.

2 Q. The user guides were created and kept in the regular course  
3 of Barnes & Noble's usual business activities, is that right?

4 A. I believe so.

5 Q. Barnes & Noble makes these user guides available to their  
6 customers, correct?

7 A. They do.

8 Q. Barnes & Noble generally strives to provide accurate  
9 information regarding the features of the Nook devices in its  
10 user guides, is that right?

11 A. We make best efforts to make sure the information in them  
12 was accurate.

13 MR. CABRAL: Your Honor, I would like to move and  
14 enter into evidence Plaintiff's Exhibits 19, 21, 24, 26, 28,  
15 39, 31, and 33, which are the user guides for the accused Nook  
16 devices.

17 THE COURT: Any objection?

18 MR. CABRAL: I apologize, your Honor. I believe I  
19 said 39. I meant to say 29. I apologize for that.

20 THE COURT: OK.

21 MR. EDERER: No objection, your Honor.

22 THE COURT: Received.

23 (Plaintiff's Exhibits 19, 21, 24, 26, 28, 29, 31, and  
24 33 received in evidence)

25 Q. I would like to direct your attention to Plaintiff's

1 Exhibit 19, which should be tab 5 in your binder.

2 A. Got it.

3 Q. Do you recognize this document as the user guide for the  
4 Nook 1st Edition?

5 A. I do.

6 Q. Could you turn to page 131 of that document.

7 A. Sure.

8 Q. I would like to direct your attention to the top of the  
9 page under the heading "Lending ebooks." Do you see that?

10 A. I do.

11 Q. Under the heading "Lending eBooks" the manual states, "With  
12 Lend Me technology from Barnes & Noble, you can share ebooks  
13 from Nook to Nook." Do you see that?

14 A. I do.

15 Q. That's what I want to talk to you about right now, the  
16 lending of ebooks using the actual Nook devices. OK?

17 A. OK.

18 Q. I am not interested in the website or the shop application  
19 or the other ways of lending that Mr. Ederer talked to you  
20 about. OK?

21 A. Understood.

22 Q. There is an arrow under the heading "Rules" on the same  
23 page, do you see that?

24 A. I see it.

25 Q. Right under the arrow there is a bullet point. Do you see

1 that first bullet point under the arrow?

2 A. The one that starts with "A loan is for 14 calendar days"?

3 Q. That's exactly right.

4 A. OK.

5 Q. Right there the document states, "A loan is for 14 calendar  
6 days, counting the day on which the lending offer is received.

7 A lent ebook is automatically returned at the beginning of the  
8 15th calendar day." In parentheses it states, "if the borrower  
9 has not returned it more quickly." Do you see that?

10 A. I see it.

11 Q. Do you agree that the lending window for the lending  
12 feature is approximately 14 days?

13 A. Again, as I stated earlier, as governed by our cloud, we  
14 strive to give the user 14 days to enjoy a loaned book.

15 Q. So the answer to the question is yes, the lending period is  
16 14 days?

17 A. Yes.

18 Q. During the 14-day lending window, is it accurate that the  
19 loan recipient is allowed to open and access the loan content?

20 A. During the lending phases, they have gone through all the  
21 steps I previously covered. If they are within that window  
22 agreed upon by the cloud, then yes, they can open and read the  
23 content.

24 Q. So the answer to the question is yes, the loan recipient  
25 has access --

MR. EDERER: Objection, your Honor. That misstates his testimony.

THE COURT: I don't think he finished his question. Why don't you rephrase it.

MR. CABRAL: Thank you, your Honor.

Q. Is it accurate that during the 14-day lending window the loan recipient has access to the loaned electronic book?

A. If they have accepted the offer and, again, as I stated earlier, all the steps are successfully completed, then the user would have access to the book.

Q. Is it also accurate that during the 14-day lending window the loan recipient can display the loaned electronic book on his or her Nook device?

A. If you mean just gain access to it and see it as part of your library -- is that what you mean?

Q. That's exactly what I mean, yes.

A. Then yes, you would see that book as part of your library.

Q. After the 14-day lending window expires, the loan recipient ceases to have access to the loaned content, is that right?

A. That's generally true, yes.

Q. After the 14-day lending window expires, the loaned book is physically deleted from the loan recipient's Nook device, isn't that true?

A. Yes. We effectively disallow any further reading of that content, and subsequently the book is deleted from the user's

1 device.

2 Q. So the loaned electronic book is deleted from the loan  
3 recipient's device, correct?

4 A. At some point, yes.

5 Q. After the 14-day window expires, I guess?

6 A. Yes.

7 Q. Is it accurate to state that the Barnes & Noble cloud keeps  
8 track of how much time is left for a loan? Is that right?

9 A. That is correct.

10 Q. But you agree that the Nook device and the Barnes & Noble  
11 cloud coordinate with one another to enforce the lending  
12 window, right?

13 A. No. The cloud is the sole governor. As I mentioned, the  
14 device is effectively a servant in that process. The cloud  
15 continues to count down irregardless of what's happening on the  
16 device. If the cloud instructs that the lending window has  
17 finished, the device has to oblige and does not allow access  
18 anymore.

19 MR. CABRAL: I would like to identify for the Court a  
20 portion of Mr. Mulchandani's deposition testimony beginning on  
21 page 104, line 24 and proceeding to page 105, line 7.

22 THE COURT: Any objection?

23 MR. EDERER: I'm sorry. What was the ending?

24 MR. CABRAL: Line 7.

25 MR. EDERER: I have no objection to the question and

1 answer, your Honor. It is incomplete.

2 THE COURT: Excuse me?

3 MR. EDERER: We can deal with the issue of  
4 incompleteness later. I don't have any objection to that  
5 question and that answer.

6 THE COURT: All right, you may read it.

7 Q. "Q. Now, you said that the device and the cloud work  
8 together in some way for the enforcement of the lending window,  
9 is that fair?

10 "A. As I understand it, in general terms, they -- yes, the  
11 device and cloud do coordinate with each other."

12 Was that your testimony

13 A. Seems to be.

14 Q. Are you saying today that they do not in fact coordinate  
15 with each other, that is, the device and the cloud, to enforce  
16 the lending window?

17 A. The specific question you asked me is the governance of the  
18 lending window specifically, which, as I mentioned, was  
19 governed by the cloud solely. If you are asking the question  
20 as to whether the cloud and server -- sorry -- the device and  
21 cloud coordinate in terms of user access to a specific piece of  
22 content, they clearly have to. Obviously, the device has to  
23 delete the content, make it unavailable for reading. So it  
24 just depends on the nature of the question.

25 Q. If you wanted to know for sure if the cloud and the Nook

1 devices coordinated with each other to enforce the lending

2 window, would Mr. Narain be a good person to ask?

3 A. I'm able to confirm that as well. I'm sure Sudeep would  
4 confirm that, too.

5 Q. If you could turn to page 136 of the user manual for the  
6 Nook 1st Edition. I want to direct your attention toward the  
7 bottom third of the page under the heading "Delivery and  
8 Download." Do you see that?

9 A. I do.

10 Q. Under that heading the user guide reads, "When you accept a  
11 lending offer, the ebook is delivered to your online digital  
12 library and automatically downloaded to your Nook." Do you see  
13 that?

14 A. I do.

15 Q. You don't dispute that the download of the loaned  
16 electronic book is automatic when a user accepts a loan offer  
17 from a Nook device, do you?

18 A. I think the language that's presented here is, again, being  
19 presented more as how we explain it to a user. It's a very  
20 different sequence of steps, which I think I already walked  
21 through in terms of how the actual physical lending process is  
22 exercised from a systems point of view between our cloud and  
23 device.

24 Q. With respect, sir, I'm not sure that you answered the  
25 question I asked. Do you dispute that the download of the



loaned electronic book is automatic when a user accepts the loan offer from a Nook device?

A. I would say that if I were answering this as a user, which is whether they have to participate in the download of the book, and again in the happy path case, the device would, upon receipt of the appropriate information from the cloud, as I mentioned, the URL and the keys, it would automatically initiate the download from Akamai to pull down the book.

Q. From the user's perspective, the download happens automatically upon accepting a loan offer on the Nook device, correct?

A. Not exactly. As I mentioned, the user accepts, the cloud transaction occurs to start the clock, the keys that download URL come down, the keys are stored, the book is downloaded separately from the cloud, and then the transaction is completed. It's just that it's not one atomic operation in that these things are all one operation. They are a series of independent steps.

Q. My question was directed to the user's perspective. The user doesn't see any of what you just said actually happen, does he?

A. That is correct. But in terms of the user case, I'm just trying to highlight the fact that the download step is kind of an independent step in the process.

Q. From the user's perspective, the user hits accept of a loan

1 request on the device, and the loaned electronic book is  
2 automatically downloaded to the Nook device, isn't that right?

3 A. That is correct. From a user perspective, that is.

4 Q. You testified earlier, if I recall, the length of time it  
5 takes from the acceptance of the loan offer on the Nook device  
6 to the time a download begins. Do you recall that?

7 A. Yes.

8 Q. You said in a happy path scenario that could take as little  
9 as a few seconds, right?

10 A. Possibly. Again, the happy path is the important piece  
11 here, which is everything has to go swimmingly well.

12 Q. By happy path scenario, you are referring to a normal  
13 course of events without any problems associated with the wi-fi  
14 connection or storage or anything like that, right?

15 A. Generally, yes.

16 Q. I would like to shift gears a bit and talk about the shop  
17 feature, if that's OK.

18 A. Sure.

19 THE COURT: If you are about to shift gears, since we  
20 are going to end in about four minutes, maybe this would be a  
21 good time to end and we will pick up in the morning.

22 MR. CABRAL: It would be a perfect time, your Honor.  
23 Thank you.

24 THE COURT: Ladies and gentlemen, tomorrow the bad  
25 news is we will start promptly at 9:00 a.m. The good news is

you will end, not me unfortunately, at 3:30 because of another matter that came up over the weekend and I have to handle it at 3:30 tomorrow. So be in the jury room at 9:00 a.m., and we will start promptly, and we will continue through 3:30 but no later tomorrow. Have a good evening. We will see you tomorrow morning.

(Jury not present)

THE COURT: How much longer do you have on cross for this witness?

MR. CABRAL: Not a tremendous amount of time, your Honor. I would estimate about 20 minutes.

THE COURT: You may step down. We will see you tomorrow at 9 o'clock.

MR. CABRAL: Your Honor, if we can get an instruction to the witness?

THE COURT: Yes. Basically, don't discuss the case with anyone. I know that is a terrible hardship, but bear with it as best you can.

THE WITNESS: I will. Thank you, your Honor.

THE COURT: Who is the next witness?

MR. CABRAL: The next witness is our infringement expert, Brian Berk, your Honor.

THE COURT: Very good. I will note for the record, I meant to mention this earlier, that I also sent to counsel over the weekend my rulings on the Daubert challenges. Those are

1 completed.

2 Unless counsel tells me otherwise, I think there are  
3 no open matters for me. I think we have dealt with all open  
4 matters. Is that right? Are there any motions hanging out  
5 there somewhere that still need to be resolved?

6 MR. EDERER: Your Honor, I would note that I believe  
7 there are two motions in limine that you indicated you were  
8 going to push off.

9 THE COURT: Remind me which ones they were.

10 MR. EDERER: L and J. One deals with preclusion of  
11 evidence relating to revenues, profits, and investments. The  
12 other relates to the presentation of artificially high damages  
13 amounts.

14 THE COURT: I needed something to keep me up tonight,  
15 and now I have something. We will deal with that tomorrow.  
16 See you tomorrow.

17 MR. SHARIFAHMADIAN: Your Honor, if we may, is it  
18 possible to get clarification on whether there will be a court  
19 session on Friday or not?

20 THE COURT: Yes, I think we are going to need to have  
21 a court session on Friday. Just Friday morning, not Friday  
22 afternoon.

23 MR. SHARIFAHMADIAN: Thank you. We have a couple of  
24 depositions for which we do not have videos. Does your Honor  
25 prefer that we bring somebody to read the deposition?

1 THE COURT: You don't have to bring them. You have a  
2 cast of thousands here. Just have one of them read the  
3 questions and one of them read the answers.

4 MR. SHARIFAHMADIAN: That's what we will do.

5 THE COURT: Very good. Are there any of those that I  
6 need to rule on?

7 MS. ARNI: There are some objections.

8 MR. SHARIFAHMADIAN: There may be some objections.

9 THE COURT: When we break right now, have your  
10 colleague tell my law clerk which those are so I can --

11 MR. SHARIFAHMADIAN: That is still several days off.

12 THE COURT: Very good. Anything else?

13 MR. EDERER: Yes, your Honor. I think this is  
14 something we may be able to work out with counsel. We  
15 understood that they were calling one of our witnesses after  
16 Mr. Mulchandani, I'm not sure in quite what order, a fellow  
17 named Jim Hilt, who has traveled here. He is also a former  
18 Barnes & Noble employee who lives in Ohio. He is expected to  
19 be called tomorrow. Now I'm not entirely clear whether he is  
20 going to be called at all or when. I just want to get some  
21 clarification.

22 THE COURT: I agree with you. Take it up with  
23 adversary counsel. If there is still a problem, let me know.

24 Very good. Thanks very much.

25 (Adjourned to 9:00 a.m., October 15, 2014)

## INDEX OF EXAMINATION

Examination of:	Page
DEEPAK MULCHANDANI	
Direct By Mr. Ederer . . . . .	413
Cross By Mr. Cabral . . . . .	478

## PLAINTIFF EXHIBITS

Exhibit No.	Received
195 . . . . .	425
19, 21, 24, 26, 28, 29, 31, and 33 . . . . .	489

## DEFENDANT EXHIBITS

Exhibit No.	Received
863 . . . . .	426
754 . . . . .	465